

I CLAIM:

SUB1 1. A plunger lift for a well producing through a production string communicating with a hydrocarbon formation, comprising a free piston having at least two sections, movable independently downwardly in the well, the sections comprising a ball and a sleeve providing a seating surface for receiving the ball so the ball and sleeve join together in the well for pushing liquid, above the piston, upwardly.

2. The plunger lift of claim 1 wherein the sleeve is made of a titanium alloy having a tensile strength of at least 90,000 psi and the ball is made of a material selected from the group consisting essentially of silicon nitride and titanium alloys having a tensile strength of at least 90,000 psi.

3. The plunger lift of claim 2 wherein the titanium alloy and the silicon nitride have a density less than about .25 pounds/cubic inch.

SUB2 4. The plunger lift of claim 1 wherein the sleeve comprises an upper section having an upper end and an open lower end providing an annular hemispherical seating surface sized to receive the ball.

5. The plunger lift of claim 4 wherein the sleeve provides a central passage opening through the hemispherical seating surface and the ball provides a valve element cooperating with the seating surface to provide a metal-to-metal seal to prevent substantial quantity of formation products from flowing inside the central passage when the ball engages the seating surface.

6. The plunger lift of claim 5 wherein the seating surface is recessed inside the sleeve and, when the ball engages the seating surface, an outer surface of the ball projects beyond an end of the seating surface.

7. A plunger lift for a well producing through a production string communicating with a hydrocarbon formation, comprising a free piston having a lower section and at least one upper section, movable independently downwardly in the well, the sections being united at the bottom of the well and having an exterior seal for upward movement together in the well for pushing liquid, above the piston, upwardly, the upper section being made of a titanium alloy having a tensile strength of at least 90,000 psi and the lower section is made of a material selected from the group consisting essentially of silicon nitride and titanium alloys having a tensile strength of at least 90,000 psi.

8. The plunger lift of ~~claim~~ <sup>B</sup> 7 wherein there is only one upper section.

9. The plunger lift of ~~claim~~ <sup>A</sup> 7 wherein the lower section comprises a ball.

10. The plunger lift of ~~claim~~ <sup>B</sup> 9 wherein there is only one upper section and the upper section comprises a sleeve.

11. A method of lifting liquids from a well producing hydrocarbons from a formation with a plunger lift having a multipart piston made of a material having a density less than about .25 pounds/cubic inch selected from the group consisting essentially of silicon nitride and titanium alloys having a tensile strength of at least 90,000 psi, comprising

placing a bumper assembly in the well adjacent the formation;

dropping the lower section in the well at a time when there is substantially no liquid column above the bumper assembly and contacting the bumper assembly at a lower velocity than if the lower section were made of a steel;

dropping the upper section in the well and contacting the lower section at the bumper assembly;

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uniting the upper and lower section into a unit near the formation and moving the unit upwardly in the well in response to formation gases passing into the well and thereby pushing liquid upwardly with the piston.

9 8  
12. The method of claim 11 wherein the dropping steps occur when gas is flowing upwardly in the well.

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13. The method of claim 11 wherein the well includes a well head and wherein the dropping steps occur when gas is flowing upwardly in the well and exiting through the well head.

14. The method of claim 11 wherein the dropping steps comprise dropping the lower section of the piston into the well, pausing for a time period and then dropping the upper section of the piston into the well.

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15. The method of claim 11 wherein the step of dropping the upper section into the well comprises dropping the upper section into the well at a time when there is substantially no liquid column adjacent the bumper assembly.

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